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ABSTRACT

This paper presents the results of an Achievement Directed Leadership (ADL) field test conducted at eight elementary schools and a middle school in an urban school district in New Jersey during the 1981-82 school year. The stated purpose of the field test was only secondarily to assess student outcomes; its major objective was to help principals and teachers establish school and classroom conditions facilitating improvement in student learning. Following brief sections on the field test's theoretical framework, study procedures and data sources, the results of ADL implementation and its impact are discussed at each of the five field test levels: (1) external agent; (2) central office staff/district; (3) principal/school; (4) teacher/classroom; and (5) student. Findings demonstrate a positive correlation between the level of program implementation and student achievement in reading and mathematics. Results showing that achievement gains were greater for those schools with higher levels of implementation lend support to the study's hypothesis that ADL has a considerable positive impact on student achievement and illustrate one way effective schools research can be put into practice. Comprehensive tables covering all field-test levels conclude the document. (JBM)

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Effects of Administrative Leadership on Student Achievement

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INTRODUCTION

This paper presents results of the field test of Achievement Directed Leadership (ADL), a program designed to help central office administrators, principals, and teachers use research knowledge to improve basic skills instruction, and, ultimately, student achievement in elementary schools. The overall purpose of the field test was to assess the effectiveness of ADL. The field test hypothesis was that ADL has a direct and significant effect on instructional leadership and administrative roles, thereby impacting on classroom processes/conditions, and consequently on students' basic skills achievement.

THEORETICAL FRAMEWORK

Recent research findings on effective classrooms, schools, and school districts provide a powerful new resource for educators. Research has shown that certain classroom behaviors of students are critically important to achievement in basic skills (e.g., Brophy & Good, 1974; Dunkin & Biddle, 1974; Medley, 1977, Rosenshine & Furst, 1973). What's more, it is how these behaviors are managed by educators at all levels of a school system that largely accounts for differences in student achievement. Research for Better Schools (RBS) staff worked with several educational agencies over a four year period to develop ways and means for getting this research knowledge into practice. The result of this collaboration is Achievement Directed Leadership, a staff development program aimed at preparing school administrators and teachers use the effective schools research to improve student achievement.

The ADL program has four main elements: (1) a focus on a set of classroom variables (i.e., prior learning, student engaged time, academic performance/ success/mastery, and coverage of criterion-relevant content) that seem important to basic skills achievement; (2) a variables management strategy, or "improvement cycle;" (3) a "leadership plan" for coordinating and focusing improvement efforts across the levels of the district hierarchy; and, (4) a staff development program to provide training necessary for installation and maintenance of the leadership plan. A detailed description of the ADL approach is available from Research for Better Schools, Inc.

STUDY PROCEDURES AND DATA SOURCES

Achievement Directed Leadership was field-tested at eight elementary schools and a middle school in an urban school district in New Jersey during the 1981-82 school year. The district's student body had much in common with other large urban areas: low SES, high dropout rate (50% in 1979), low achievement scores, and a high percentage of minority and ESL students (90%). In an effort to reverse the pattern of low achievement, the superintendent indicated that the district would endeavor to reasonably replicate all elements of the ADL program.

The field test was designed to document implementation and assess program impact at five levels: (1) external agent (i.e., RBS); (2) central office staff/district; (3) principal/school; (4) teacher/classroom; and, (5) student. At each level, actual implementation and role performance was compared to intended functions specified in the ADL model. Table 1 presents the overall framework that was used to guide the field test. At

each level, the functions listed in the Table refer to the prescribed activities for that level that are deemed necessary for implementing the ADL approach.

Multiple data sources were used to address field test objectives at each of the five levels, including periodic field interviews with the superintendent, district staff, principals, and teachers, end-of-year surveys of the above groups, various ADL implementation forms, structured classroom observations and contact reports, district and school documentation files, and standardized achievement test results. Efforts were made to triangulate qualitative data wherever possible. The resulting information base was quite large.

Analyses of qualitative data were primarily descriptive. Interviews and observations were abstracted using structured formats and general themes were reported. Numerical indices of level of program implementation were constructed to describe principal and teacher behaviors related to use of the key elements of ADL. These indices are briefly described in Tables 2 and 3. Analysis of student achievement data (California Achievement Tests) conducted at the school level, was guided by the Title I norm-referenced evaluation model (Tallmadge and Wood, 1976). Normal curve equivalents (NCEs) were used as the basis for analysis. Score changes during the program year were compared with changes during a baseline year. In addition, the relationship between student achievement and level of program implementation at the different schools were examined.

It should be recognized that the field test was not designed to be an experimental study. Although the assessment of student outcomes was a major objective of the field test, an equally important and, perhaps, more

realistic objective was the helping of educational practitioners, particularly principals and teachers, to establish the proper conditions in schools and classrooms which research indicates will ultimately facilitate improvement in student learning. The final report for the field test describes several limitations to the evaluation including timing issues, design issues, analytic issues, and data quality issues. Although these factors emphasize the need for caution in interpreting the results, the consistency of the observed data trends and the scope of the information base provide a accurate picture of the implementation and impact of Achievement Directed Leadership in the school district.

RESULTS

Results at each of the five field test levels are briefly discussed below.

Basic Skills Component (BSC) Level

The primary role for RBS was to provide the necessary support, in terms of training and technical assistance, to successfully install the ADL program in the district. Overall, initial installation of the program in the district was regarded as a success by central office staff. Training was well received and administrators were confident that they had acquired the necessary knowledge and skills needed to successfully implement all components of the program. Observations by BSC staff indicated that there was variation among principals in their skill development and initial commitment to the program. This suggested that the quality of implementation would vary at the school level. Ongoing support was

provided throughout the year to supplement initial training and to assist in program planning, problem-solving, and maintenance. Follow-up assistance by BSC staff, and leadership training seminars were perceived by administrators as adequate and beneficial. As the school year progressed, district leadership, particularly the superintendent, gradually assumed more responsibility for program maintenance and implementation and the BSC role diminished as suggested by the program model.

District Level

Central office staff included the superintendent, two assistant superintendents, and eleven members of the District's Department of Instruction (DOI). Their ADL role-related functions included planning, training, and supervising. The concept of participatory supervision requires that central office staff participate with principals in a variety of ways in order to strengthen the principal's problem solving abilities and to reinforce their work with teachers in the improvement cycle.

Overall, central office leadership in the improvement effort was very strong with the superintendent taking a very active role in most aspects of planning and actual implementation. The superintendent, along with assistant superintendent for curriculum and instruction, engaged in cooperative problem-solving with all DOI staff and principals at each of the test schools. Jointly, the superintendent, DOI staff, and other central office staff were responsible for district-wide planning and training. The DOI staff cooperated with individual principals in planning and teacher training and monitored principals' progress throughout the year.

Extensive planning was carried out for tasks such as: preparing program budgets, allocating resources, scheduling training sessions, defining staff roles and responsibilities, determining participatory-supervision procedures, specifying training content, structuring classroom observations, developing curriculum guides, and solving problems. The superintendent developed a comprehensive "mission statement" that guided improvement efforts throughout the year. District goals were set, staff roles and responsibilities were explained, and procedures for reaching goals and assessing performance were detailed. Monthly leadership seminars were held with the superintendent assuming the primary role. A major planning effort resulted in a district wide curriculum mapping guide (Basic Skills Curriculum Guide - A Management Guide for Reading, Language Arts and Mathematics Grades K-8). This guide represented an overall plan for instructional content to be covered by each classroom teacher during the course of the school year.

Major vehicles for training and participatory-supervision were the leadership seminars and district-principal conferences (two conferences with each principal). In addition to the district/principal conferences, DOI staff assigned to each school monitored program implementation and worked with principals to solve problems and make sure that program operations were following plans.

Participation of central office staff in the improvement program represented a considerable change in their roles and responsibilities as instructional leaders. Table 4 summarizes information relating to perceptions of these role changes. All central office staff and most principals felt that central office staff spent more time during the field

test year supporting basic skills instruction than in the previous year. Although many teachers agreed with this, several did not see a change in the amount of time since they had worked with DOI curriculum coordinators previously, although in substantially different roles. Principals and central office staff also agreed that the efforts of district level staff in supporting basic skills instruction were more effective than in the previous year. Many teachers were not sure of the effectiveness of central office support since they had not seen the district's test results at the time of the survey and had minimal access to district-wide information.

Principal Level

The basic functions of the principal in the improvement process are essentially the same as those of central office staff: planning, training, and supervising. Principals are a critical link in improving schools. They are responsible for translating global, district-wide policies into action plans for guiding and monitoring instructional improvement at their school. Planning tasks for teacher training included scheduling, determining faculty participants, setting agendas, handling logistics, and preparing for actual presentations. During the school year, planning focused on implementation issues concerning the two major focus variables (student engaged time and instructional overlap) and on the participatory supervision process. Examples of these planning tasks were identifying prior learning data, assisting in curriculum matching activities, identifying appropriate instructional materials, identifying appropriate improvement strategies, arranging necessary inservice activities, developing schedules for classroom observations and principal/teacher

conferences, and clarifying procedures for conducting observations and conferences. Principals provided teacher training at six of the nine field test schools. Overall, teacher training was generally regarded as successful in providing the prerequisite knowledge and skills needed for program implementation at the classroom level. However, some problems were observed in terms of the apparent level of teacher commitment and expectations at certain schools. This suggested that variations in subsequent program implementation might be expected.

Results indicate that district plans for participatory supervision were carried out at virtually all schools. Interviews with principals and teachers regarding the quality of participatory supervision suggest that the activities were beneficial and fostered improvement in basic skills instruction. Almost all teachers and principals welcomed the opportunity to talk together on a one-on-one basis about classroom instruction, and several principals reported that they were glad that the structured observations "forced" them to visit classrooms.

Principals varied in their attitudinal reactions to the program. Their attitude appeared to influence their participation in teacher training, but not the number of principal/teacher conferences and classroom observations they conducted.

Variations in principal level implementation for each school are summarized in Table 5 in terms of summary indices for each of four important principal level variables: attitude toward program, classroom observations, principal/teacher conferences, and training results. The indices indicate for each variable whether level of implementation can be described as high, medium, or low with respect to program expectations.

The overall principal implementation index summarizes the indices of the four variables and reflects the variation between schools in the degree of principal level implementation. As indicated in Table 5, implementation at the principal level was rated high at one school (School E), medium at five schools (Schools A, D, F, G, and H), and low at three schools (Schools B, C, and I).

Teacher Level

Implementation of Achievement Directed Leadership at the teacher level involves using the improvement cycle to guide planning, classroom management, and instruction. Teachers are expected to use the improvement cycle to set instructional goals, identify opportunities for improvement, and make necessary changes in instructional procedures. In the improvement cycle, teachers attend to several targeted classroom variables: prior learning, student engaged time, instructional overlap, and academic performance.

Overall, program implementation at the teacher level was regarded as successful in terms of expected instructional activities in the classroom. Field test teachers, in general, reported that they used research information to guide the instructional improvement process and indicated that they attended to targeted instructional variables. A majority of them seemed to adequately implement the improvement approach.

However, considerable variation in the reported degree of teacher implementation was observed between schools. Teachers' reports of their activities indicated that overall implementation was relatively high in relation to the program model at some schools, but relatively low at other

schools. Table 6 represents information on teacher implementation in terms of summary indices. The overall teacher implementation index suggests that teachers engaged in the improvement process to a high degree at two schools (Schools A and G), to a medium degree at four schools (Schools B, D, F, and I), and to a low degree at three schools (Schools C, E, and H).

Summary of Program Implementation, By School

A summary index of level of program implementation was derived by combining the teacher and principal indices.

The results suggest that level of implementation varied widely across schools with two schools (Schools A and G) having "high" indices, four schools "medium" indices (Schools D, E, F, and I), and three schools "low" indices (Schools B, C, and H). The source of the variation is not readily apparent. Some variation occurs as the improvement process flows through each successive level of the hierarchy. However, it should be noted that the degree of teacher level implementation did not necessarily follow from the degree of principal level implementation.

The probable major source of variation is level of commitment of principals and teachers, an area that was not formally assessed during the field test. Scriven (1973) and Lipe and Havenas (1977) suggested that degree of motivation and commitment may have a large influence on implementation of educational innovations.

Various levels of commitment were observed by BSC staff in one or more of the field test schools. Where the principal and teachers were either actively or passively resistant, school implementation seemed to be low. Where some individuals, but not the entire group, were committed, school

implementation appeared to be medium. Where there was group commitment, school implementation was regarded as high. Thus, level of commitment seemed to be a major factor in implementation behavior.

Student Level

The hypothesis of the field test was that installation and implementation of Achievement Directed Leadership at the four levels described above would affect students' classroom behaviors and academic achievement. The actual degree of implementation at each school would logically affect the degree to which student outcomes at each school are influenced. The relatively high level of program implementation seemed to result in positive outcomes in terms of targetted student behaviors and instructional processes. Teachers reported that they attended to students' prior learning in designing their instruction. Teachers systematically monitored students' success in daily work, mastery of skills, and review of content. Reported results indicated that students daily success and mastery rates were relatively high across the district.

Assessment of student engaged time (SET) indicated that high levels were achieved in most classes throughout the district. SET levels were of sufficiently high magnitude to predict that students test scores would exceed expected achievement levels (in accordance with the research of Stallings and Kaskowitz, 1974 and Fisher, Filby, Marliave, Cohen, Dishaw, Moore, & Berliner, 1978). Specifically, average SET for 59 percent of the reading classes fell in the range where achievement gains would be expected to exceed normal growth according to national norms.

Findings in terms of instructional overlap (i.e., match between classroom instruction and test content) were similarly positive. Results indicated that the coverage of curriculum content matched almost all basic skills objectives assessed by the California Achievement Test (CAT). From this, one would expect growth in student achievement to exceed the normal range (i.e., equivalent percentiles).

Student achievement results in both reading and mathematics are impressive. Students at all schools progressed at rates at least consistent with achievement expectations based on the national norm group, and at many schools, gains exceeded achievement expectations. In most cases, these gains reversed trends exhibited during the baseline year. At the end of the 1981-82 year, achievement in most field test schools was around the national average in reading, and significantly higher than the national average in mathematics. Likewise, performance relative to statewide basic skills standards improved, with almost all students in the district meeting state standards appropriate for their grade level.

Table 7 summarizes CAT results, by school, for the program year (1982) as well as for two baseline years. In addition, the degree of program implementation is indicated. The results are graphically illustrated in Figures 1 and 2 for reading and mathematics, respectively. The findings demonstrate relational trends between level of program implementation and student achievement. The two schools (Schools A and G) with a high degree of program implementation exhibited the largest increases in achievement in reading and mathematics over the course of the field test. In addition, their gains from 1981 to 1982 were in contrast to their gains over the baseline year (1980 to 1981). On the other hand, the three schools

(Schools B, C, and H) with a low degree of implementation exhibited little change during the field test year and this change was basically consistent with the change over the baseline year. The three schools (Schools D E, and F) with medium levels of implementation exhibited varying achievement gains during the field test year and in comparison to the baseline year. In some cases, their gains (e.g., School F for mathematics) approached those of the high implementation schools while in other cases their gains (e.g., School E for reading and mathematics) were similar to low implementation schools.

In summary, a relationship between level of program implementation and student achievement in reading and mathematics were demonstrated. Although all schools implemented the program to some degree and all exhibited improvement at least consistent with expectations, achievement gains were most positive for those schools with the highest levels of implementation. Although the field test evaluation design was non-experimental, this relationship lends considerable support to the hypothesis that Achievement Directed Leadership has a considerable positive impact upon student achievement.

CONCLUSION

The field test study shows that a structured approach for changing the roles of school administrators from management-type functions to those of instructional leaders can have significant effects on the improvement of achievement of educationally disadvantaged students. The study illustrates one way for the recent research on effective schools to actually be put into practice. These results are particularly relevant, given findings of

the recent Commission on Excellence report which calls for sweeping policy changes regarding factors such as instructional content, time, teaching and leadership. Achievement Directed Leadership exemplifies an approach for implementing some of these changes and the field test illustrates achievement outcomes when school districts adopt such an approach.

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Table 1
Field Test Framework

Level	Functions	Field Test Objectives	Field Test Methods
BSC	• Plan and conduct district orientation to the improvement approach • Plan and deliver initial training to district staff in the use of the approach • Provide follow-up technical assistance to district to facilitate implementation of the approach	• Document the process of initially installing the improvement approach • Document the outcomes of installing the improvement approach in terms of acquired knowledge, skills and attitudes	• Observe orientation and training sessions • Observe Implementation Seminars • Interview participants (i.e., district leadership and supervisors) • Survey participants' reactions to orientation/training
District	• Plan and conduct principals' orientation to the improvement approach • Plan and conduct training of principals in use of the approach (i.e., their role-related functions) • Engage in participatory-supervision with principals	• Document the process and outcomes of staff development for principals • Document the process and outcomes of participatory-supervision	• Observe orientation and training sessions • Interview district staff and principals about district/principal supervisory conferences • Analyze District/Principal Conference Form • Survey principals' reactions to orientation/training

Table 1 (continued)
Field Test Framework

Level	Functions	Field Test Objective	Field Test Methods
Principal	• Plan and conduct teachers' orientation to the improvement approach • Plan and conduct training of teachers in the use of the improvement cycle/focus variables • Engage in participatory-supervision with teachers	• Document the process and outcomes of staff development for teachers • Document the process and outcomes of participatory supervision • Document principals' use of the improvement cycle	• Observe orientation and training sessions • Interview principals and teachers about district/principal supervisory conferences • Analyze the Principal/Teacher Conference Form • Survey teachers' reactions to orientation/training • Validate classroom observations
Teacher	• Plan lessons and classroom activities • Manage the classroom • Deliver instruction	• Document teachers' use of the improvement cycle/focus variables to guide planning, management, and delivery of instruction	• Interview teachers about use of the improvement cycle and its impact on planning, management, and delivery of instruction • Obtain confirmatory reports from principals, district staff, and BSC field staff of teachers' use of cycle • Survey teachers' use of improvement cycle

Table 1 (continued)
Field Test Framework

Level	Functions	Field Test Objective	Field Test Methods
Student	• Demonstrate student classroom behaviors identified as critical to achievement	• Document impacts of the improvement approach on critical student behaviors	• Analyze student behaviors: student engaged time; instructional overlap; academic performance; and prior learning
	• Demonstrate appropriate levels of achievement in basic skills subjects	• Document impacts of the improvement approach on students' achievement in reading/language arts and mathematics	• Analyze students' achievement based on standardized achievement tests used in the district

Table 2

Description of Principal Level Implementation Indices

Variables	Description	Data Sources	Decision Rule for Index[a]		
			Low 1	Medium 2	High 3
Number of classroom observations	Average number of times principal observed each teacher's classroom; six were planned	Teacher questionnaire	$x<6.0$	$6.0 \leq x < 7.0$	$x \geq 7.0$
Number of principal/teacher conferences	Average number of conferences with each teacher; three were planned	Teacher questionnaire, principal/teacher conference form	$x<3.0$	$3.0 \leq x < 3.7$	$x \geq 3.7$
Training results	Total index represents the average of six specific indices, three for the content workshop and three for the time workshop. These workshop indices include measures of (1) overall reaction to training, (2) expectations regarding likelihood of success, and (3) perceived knowledge and skill development	Teacher training questionnaires	$x<3.4$	$3.4 \leq x < 4.0$	$x \geq 4.0$
Attitude toward program	General affect, enthusiasm	BSC contacts/observations, interviews, principal questionnaire	BSC judgment	BSC judgment	BSC judgment

[a] For training results, the decision rules were applied to the six specific indices which make up the overall index.

Table 3

Description of Teacher Level Implementation Indices

Variables	Description	Data Sources	Decision Rule for Index		
			Low 1	Medium 2	High 3
Research use	Combination of measures of teachers' reported use of research/classroom data to set improvement goals and improve teaching	Teacher questionnaire	$x<50\%$ positive responses	$50\% \leq x < 70\%$ positive responses	$x \geq 70\%$ positive responses
Instructional improvements	Combination of measures of teachers' reported improvements in student engaged time, content overlap, prior learning, student success, mastery, and content review	Teacher questionnaire	Same	Same	Same
Success in implementation	Combination of measures of teachers' reported success in implementing Achievement Directed Leadership components related to: student engaged time, content overlap, prior learning, student success, mastery, and content review	Teacher questionnaire	Same	Same	Same
Changes in teaching behavior	Combination of measures of teachers' reported changes in instructional planning, classroom management, and teaching techniques	Teacher questionnaire	Same	Same	Same
Improved classroom effectiveness	Teachers' overall perception of effectiveness of basic skills instruction relative to prior year	Teacher questionnaire	Same	Same	Same
Attitude toward program	Teachers' overall reaction; mean rating; scale of 1 (very negative) to 5 (very positive)	Teacher questionnaire	$x<3.0$	$3.0 \leq x < 3.5$	$x \geq 3.5$

Table 4

Summary of Central Office Staff Implementation of Achievement Directed Leadership: New Jersey School District

Indicator	Respondent Group	Perceived Change
Perception of time central office staff spent supporting basic skills instruction in the schools, relative to prior year	Central Office Staff	Increase (all indicated increase in working directly with schools)
	Principals	Increase (82% indicated increase in working with them)
	Teachers	Uncertain (42% reported increase, others not sure)
Perception of effectiveness of district in supporting basic skills instruction, relative to prior year	Central Office Staff	Increase (all indicated marked increase in effectiveness)
	Principals	Increase (all indicated increase in effectiveness)
	Teachers	Uncertain (40% reported increase, others not sure)

Data sources: end-of-year questionnaires and interviews

Table 5

Summary Indices[a] for Principal Implementation of Achievement Directed Leadership: New Jersey School District

School	Indices[a] for Principal Level Variables[b]				Sum of Indices	Overall Principal Implementation Index
	Attitude Towards Program	# Classroom Observations	# Principal/ Teacher Conferences	Training Results		
A	3	3	1	2	9	Med
B	1	2	1	2	6	Low
C	2	2	2	1	7	Low
D	2	2	2	2	8	Med
E	3	2	2	3	10	High
F	2	3	2	2	9	Med
G	3	2	1	3	9	Med
H	1	3	3	2	9	Med
I	3	1	1	2[c]	7	Low

[a]Indices describe whether implementation is considered relatively high (index = "3"), medium (index = "2"), or low (index = "1").

[b]Data sources: end-of-year questionnaires, surveys, and principal/teacher conference forms.

[c]Data not available, assigned average value.

Table 6

Summary of Indices[a] for Teacher Implementation of Achievement Directed Leadership: New Jersey School District

School	Indices for Teacher Level Variables[b]						Sum of Indices	Overall Teacher Implementation Index
	Research Use	Instructional Improvements	Success in Implementation	Changes in Teaching Behavior	Improved Classroom Effectiveness	Attitudes Toward Program		
A	3	3	3	2	3	2	16	High
B	3	1	2	2	1	1	10	Med
C	2	1	2	1	1	1	8	Low
D	3	3	2	2	2	2	14	Med
E	2	2	2	1	1	1	9	Low
F	2	2	2	2	2	2	12	Med
G	2	3	3	3	2	3	16	High
H	1	1	1	1	1	1	6	Low
I	3	3	2	1	2	2	13	Med

[a] Indices describe whether implementation is considered relatively high (index = "3"), medium (index = "2"), or low (index = "1").

[b] Data source: End-of-year questionnaire.

Table 7

Summary of Relationship Between Level of Program Implementation and Student Achievement Gains: New Jersey School District

School	Summary of School Implementation	READING					MATHEMATICS				
		1980	1981	1982	+/- 80-81	+/- 81-82	1980	1981	1982	+/- 80-81	+/- 81-82
A	High	44	46	50	+2	+4	54	55	62	+1	+7
B	Low	54	56	57	+2	+1	64	66	69	+2	+3
C	Low	46	47	48	+1	+1	53	57	58	+4	+1
D	Medium	48	46	49	-2	+3	54	57	59	+3	+2
E	Medium	46	44	44	-2	0	51	51	51	0	0
F	Medium	45	40	43	-5	+3	53	49	54	-4	+5
G	High	47	44	55	-3	+11	50	51	61	+1	+10
H	Low	53	55	55	+2	0	54	59	61	+5	+2
MEAN		48	47	50	-1	+2	54	56	59	+2	+4

Note: Test used is the California Achievement Test: Scores are reported as NCEs.

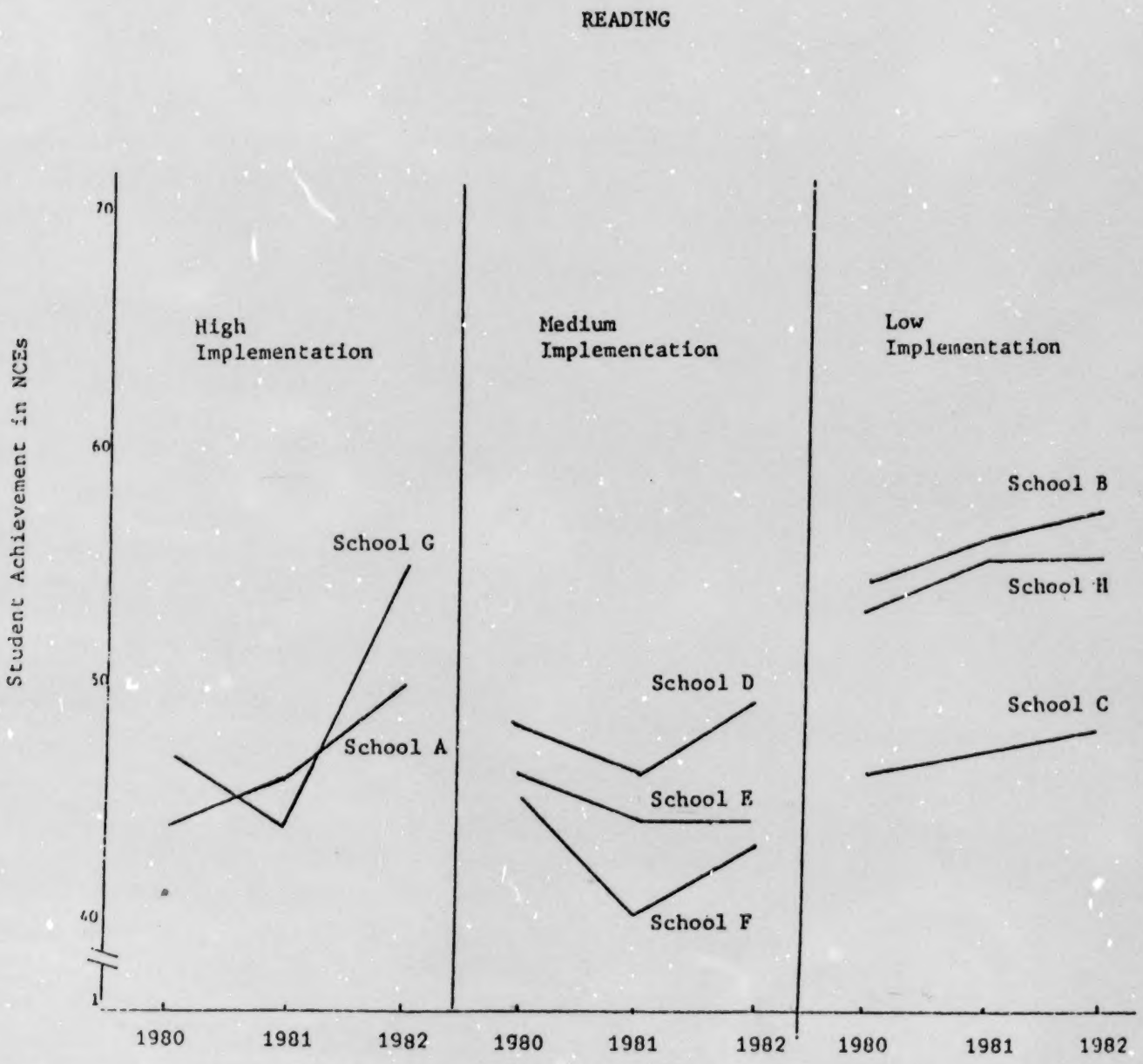

Figure 1. Relationship of implementation to achievement gains in reading by school: New Jersey School District.

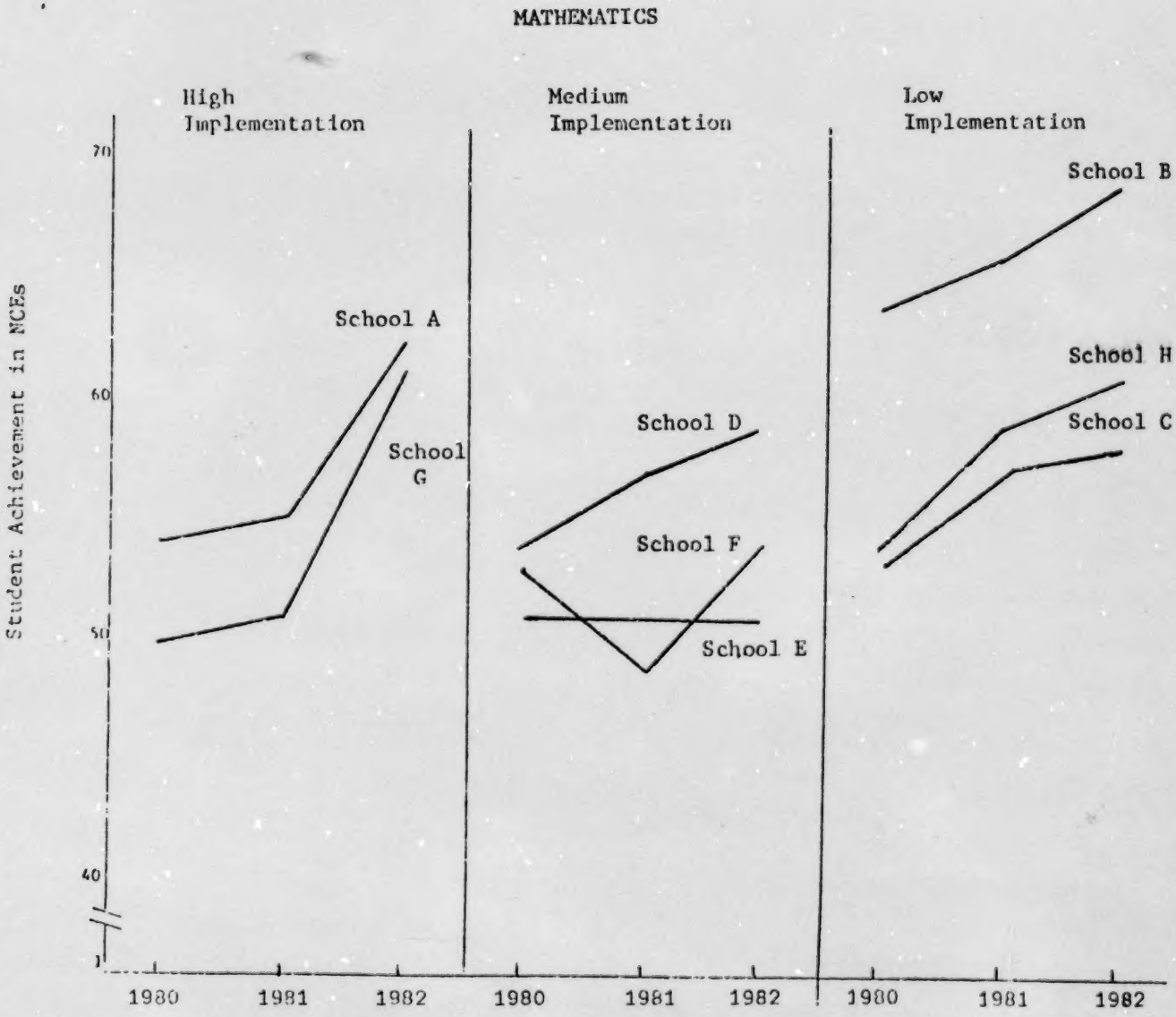

Figure 2. Relationship of implementation to achievement gains in mathematics by school: New Jersey School District.